

Public Health is Purchasable. Within Natural Limitations any Community  
can Determine its own Death-rate.

Vol. IX]

[No. 2

# QUARTERLY REPORT

OF THE

MYSORE STATE DEPARTMENT OF HEALTH

APRIL—JUNE, 1937

P. PARTHASARATHY, L.M.S., B.S.Sc., L.R.C.P.,

L.R.C.S., D.T.M., D.P.H.,

*Director of Public Health.*



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1937

**“Search for the Truth is the noblest occupation  
of Mankind, its publication a Duty.”**

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### MYSORE STATE DEPARTMENT OF HEALTH

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#### GENERAL.

During the quarter the Director of Health was deputed to Simla in G. O. No. G. 9955-6—P. H. 144-36-4, dated June 4—12th, 1937, for attending the meeting of the Central Advisory Board of Health on 22nd and 23rd June and to deputise during the absence of the Second Member of Council. Mr. G. M. Dominick was in charge of the current duties of the Director of Health in his absence.

The deputation of the Director has also been sanctioned in G. O. No. G. 10179-81—P. H. 108-36-11, dated 22nd and 24th June 1937, to proceed to Bandoeng, Java, for attending the Conference on Rural Hygiene in the Far East from 3rd August to 13th August 1937.

Health conditions during the quarter were fairly normal except for the prevalence of cholera in Mysore District. The special staff of six Sub-Assistant Surgeons appointed for anti-inoculation work continued till about the end of April and the spread of cholera was effectively controlled.

In Notification No. 2479—C. B. 153-36-1, dated 2nd April 1937, Mr. N. Krishniengar was appointed Sanitary Engineer in place of Mr. B. R. Garudachar transferred to the Buildings Division.

Government Order No. 2630-35—C. B. 164-36-1, dated 1st and 6th April 1937, permits Dr. Erika Rosenthal to retire from service from 17th November 1937.

Purchase of models from the Calcutta Model works was sanctioned by Government in G. O. No. G. 9102-4—P. H. 61-36-8, dated 17th May 1937, at a cost of Rs. 1,410 for the permanent Health Museum in Mysore City.

Government Order No. G. 9892-3—P. H. 139-36-2, dated 10th and 11th June 1937, sanctioned the deputation of Mr. C. Raghunatha Rao to Poona for work under Dr. Barber,



In Notification No. G. 9512—P. H. 91-36-4, dated 26th and 31st May 1937, Government passed orders extending the furlough leave to Mr. S. Ramachandra Rao up to 24th June 1937, preparatory to retirement.

The Director of Health was away from headquarters for 28 days during the quarter on routine inspection of sanitation, vaccination, water supplies, maternity homes, etc. Inspections of the construction of bore-hole latrines in Periyapatna Taluk and hookworm campaign in Krishnarajapet Taluk and fly-control work in Bethamangala and Chikballapur were made. He attended the meetings of the Representative Assembly and the Legislative Council as also of the Trust Board meeting in Mysore City. The Director attended the inaugural meeting of the Central Advisory Board of Health held in Simla on the 22nd and 23rd June 1937.

## **BUREAU OF ADMINISTRATION.**

### **(a) City Health Organisations.**

#### **BANGALORE CITY.**

**M. G. SRINIVASA PEIDPET, L.M.S., B.S.SC.,**  
*Health Officer.*

Mr. G. M. Dominick handed over charge of the Health Office to Mr. S. R. Madhavachar on 5th June and the latter held charge until he was relieved by Mr. M. G. Srinivasa Peidpet on 23rd June 1937.

During the quarter, 797 births and 872 deaths were registered showing an increase of deaths over births. The number of deaths under one year of age was 198.

Plague accounted for 5 attacks with 2 deaths and as a preventive measure 376 anti-plague inoculations were done. The incidence of small-pox was practically insignificant as only three attacks occurred. The usual preventive measure, *viz.*, vaccination was carried on the number of primary and re-vaccinations done being 1,908 and 553.

No attacks were reported under measles, diphtheria and hydrophobia; whooping cough accounted for three deaths.

A total of 17 deaths were reported under typhoid fever and 174 anti-typhoid inoculations were performed.

The number of houses disinfected during the quarter was 74.

Stray dogs were destroyed as usual, the number being 847.

A health and baby week was celebrated in the Binny Mills.

As part of propaganda six cinema shows were held in different parts of the City.

Due action was taken against sanitary offences and 567 notices were issued. Eighteen eating houses, 5 aerated water factories, 89 coffee-clubs and sweetmeat shops and 16 bakeries were inspected.

The number of samples analysed by the Food Analyst was 62, of which 24 were found adulterated as detailed below :—

<i>Samples</i>	<i>No. examined.</i>	<i>No. adulterated.</i>
Ghee	37	16
Butter	3	0
Coffee powder	2	2
Soji	5	0
Cow's milk	8	3
Buffaloes milk	6	3
Mixed milk	1	0

#### MYSORE CITY.

S. SESHAGIRI RAO, B.Sc, M.B.B.S., D.P.H.,

*Health Officer.*

In the quarter under report 992 births and 723 deaths were reported as compared with 917 births and 919 deaths in the previous quarter. Of these, 129 deaths were among infants under one year of age.

Three attacks with 2 deaths from plague were reported, 5 attacks from small-pox were registered and 23 attacks and 13 deaths from cholera occurred during the quarter. The number of anti-plague inoculations done was 126 and of anti-cholera inoculations 5,193. As compared with 3,960 in the previous quarter, 3,331 anti-small-pox vaccinations were done.

Five fatal cases of influenza were reported.

Typhoid accounted for 14 deaths and 130 anti-typhoid inoculations were done.

During the quarter 879 stray dogs were destroyed. One case of dog-bite was reported.

A total of 154 houses were disinfected in the quarter under report.



At the Office Laboratory the following samples were examined :—

<i>Samples.</i>	<i>No. examined.</i>		
Water (bacteriological) ...	...	...	156
Do (Chemical) ...	...	...	46
Do (free chlorine) ...	...	...	81
Sewage ...	...	...	34
Milk (bacteriological) ...	...	...	14
Rodents for plague ...	...	...	2
Other samples ...	...	...	2

During the quarter 66 visits were paid to hotels, 267 to coffee clubs, 53 to aerated water factories, 55 to bakeries and 227 to mutton stalls. Decomposed fruits and vegetables of about 329 basketsful were destroyed in different parts of the City with a view to improve their condition in conformity with the Municipal Regulation. A total of 1,070 notices were issued under different sections of the Municipal Regulation, of which 793 were complied with the terms of the notice. The mohallas were inspected regularly to dispose of routine papers and see to their sanitation. The Engineer was being appraised of defective drains as and when noticed during the inspections. Eighty (80) building papers were systematically inspected and suggestions to improve their ventilation and lighting were given and pucca internal drainage and a good latrine were in all cases made conditional to the grant of licenses.

Each Overseer has been asked to make a systematic survey of every house as to the condition of the latrine, internal drainage, cleanliness, etc., and notices for improving all the defects noticed were served on the parties. As a result 207 flush latrines were constructed during the quarter.

All the restaurants, hotels, tea shops and aerated water factories were inspected.

During the quarter 82 samples of foods were analysed as shown below :—

<i>Samples</i>	<i>No. examined.</i>	<i>No. adulterated.</i>	<i>No. prosecuted.</i>	<i>No. convicted.</i>
Cow's milk ...	24	7	11	9
Buffaloes' milk ...	30	14	7	4
Mixed milk ...	7	1	1	1
Skimmed milk ...	2	...	...	...
Pasteurised milk ...	2	...	...	...
Ghee ...	5	...	...	...
Butter ...	9	3	2	2
Cream ...	2	...	...	...
Coffee Powder ...	1	1	...	...

## KOLAR GOLD FIELDS.

M. RAMACHANDRA RAO, B.A., M.B.B.S., C.P.H.,  
*Health Officer.*

The number of births and deaths reported during the quarter were 1,097 and 629, respectively. Of the total mortality 191 were infant deaths under one year of age.

The area was free from cholera during the quarter; 7 attacks with 3 deaths from plague and 11 attacks of small-pox were reported. As a preventive measure 129 anti-plague inoculations and 863 primary and 774 re-vaccinations were performed.

One attack with one death from hydrophobia was reported. Whooping cough accounted for one death.

The number of houses disinfected was 1,240.

A total of 392 stray dogs and 7,727 rats were destroyed.

At the Office Laboratory the following samples were analysed :—

<i>Samples.</i>	<i>No. examined.</i>
Water	6
Smear for G. C.	38
Sputum for T. B.	29
Urine	50
Motion for hookworm	19
Motion for cholera	7
Liver and spleen for anthrax	29
Blood for malaria	28
Dead rat for plague	1

Nine dogs' brains were sent to Coonoor for examination and 16 anti-rabic treatments were given.

During the quarter 292 visits were paid to hotels, 242 to mutton and fish stalls, 196 to chakna stalls, 236 to coffee clubs, 154 to aerated water factories, 174 to bakeries, 27 to markets and 23 to slaughter houses.

**(b) District Health Organisations.**

## MYSORE DISTRICT.

P. SHAMA RAO, B.A., L.M.S.,  
*Health Officer in charge.*

Mr. M. G. Srinivasa Peidpet handed over charge to Mr. P. Shama Rao on June 12 and the latter held charge until he was relieved on 26th July 1937.



During the quarter an extensive prevalence of cholera occurred in this district. Nine special duty Sub-Assistant Surgeons appointed in the previous quarter continued to work till 5th May, when seven of them were withdrawn owing to the subsidence of the epidemic. Two Sub-Assistant Surgeons, however, continued inoculation work till the end of June. Weekly shandies in the affected areas were prohibited. A total of 585 attacks and 341 deaths were reported; and 33,305 anti-cholera inoculations were done.

Under plague 72 attacks with 48 deaths were reported and as a preventive measure 4,890 anti-plague inoculations were performed.

Small-pox accounted for 17 attacks with 3 deaths. Routine vaccinations done during the quarter amounted to 5,648 primary and 1,748 re-vaccinations.

The District Health Officer visited 26 villages and 25 towns supervising anti-cholera measures and inspection of the work of Sanitary Inspectors in the District.

#### SHIMOGA DISTRICT.

G. N. SESHADRI, L.M.S., D.P.H. (Cal.),

*Health Officer.*

In Shimoga District 3,075 births and 4,867 deaths were reported, of which 559 were deaths among infants under one year of age.

During the quarter one attack with one death from plague was reported. A total of 453 anti-plague inoculations were done.

Under small-pox 16 attacks with 1 death were reported, and 5,085 primary and 1,426 re-vaccinations were performed making a total of 6,511.

The incidence of cholera was fairly heavy on the other hand. A total of 185 attacks and 99 deaths occurred. Preventive measures were adopted in all affected villages and their neighbourhood and a total of 5,127 anti-cholera inoculations were done.

The District Health Officer visited a total of 84 villages and towns. He also visited three schools and examined 191 children. Magic lantern lectures were delivered in 6 villages and health cinema shows were held in 10 villages. Leaflets on cholera were distributed in 30 villages and during shandies in 5 villages.



**BUREAU OF MATERNITY AND CHILD WELFARE.****(a) State Organization.**

ERIKA DEUSSEN ROSENTHAL, M.D.,

*Organiser.*

Dr. (Mrs.) E. D. Rosenthal was on privilege leave for one month from the middle of April 1937 to the middle of May 1937, when Mr. E. Anantha Rao was in charge of the current duties.

During the quarter, the Organiser was on tour for 30 days in Bangalore, Mysore and Tumkur Districts. The places visited were : Channapatna, Closepet, Doddballapur, Veruna, Nanjangud, French-Rocks, Seelneri, Krishnarajpet, Gargeswari, Seringapatam, Tumkur, Bellavi, Chicknayakanhalli, Sira, Chicknahalli, Tiptur, Nonavinkere, Huliur, Honnavalli, Honodike, Gubbi and Hebbur.

She gave six lectures and one health talk in Doddballapur, Bangalore, Tiptur, Tumkur and Mysore.

The following maternity and child welfare centres were inspected :—

Bellimut Creche, Creche of the Mysore Cotton, Silk and Woollen Spinning Mills, Creche of the Minerva Mill, Hebbal Military Child Welfare Centre, Vani Vilas Centre, Devaraj Centre, Civic and Social Progress Association Centre, Mahila Seva Samaj, Savoy Centre, Gajasala Centre, Subramanyam Centre, Mallamma Centre, Krishnarajendra Mill Creche, French-Rocks Child Welfare Centre, Nanjangud Child Welfare Centre and Welfare Centre of Bethalur.

At Bethalur and Seringapatam ante-natal and baby clinics were held by the Organiser.

The work of the midwives was supervised in the following places :—

Krishnarajpet, T.-Narsipur, Gargeswari, Nanjangud, French-Rocks, Huliur, Honnavalli, Tiptur, Gubbi, Nonavinkere, Hebbur and Doddballapur. The outfit of the midwives is generally poor. Frequently the midwives brought some ladies for examination by the Organiser who always welcomed this, as the way how the midwife assists in the examination gives the best opportunity to judge their skill. Special attention was paid to the ante-natal work to be done by the midwives.

Nursery schools were inspected during the quarter. These were: Sri Krishnarajendra Mills' Nursery School and the Gajasala Centre Nursery School, Mysore City.

The Organiser also visited five private homes, three in Bethalur and two in Chicknayakanhalli, on request to give health advice for sick women and children.

One factory was visited.

### (b) Voluntary Organisations.

#### RED CROSS SOCIETY.

The Executive Committee of the State Branch met on the 15th April 1937 at Bangalore and again on the 18th June 1937 at Mysore. *Rajamantrapravina Diwan Bahadur* K. Matthan, B.A., took charge of the office of the Chairman of the Executive Committee, in place of Sir Charles Todhunter, K.C.S.I., J.P., resigned owing to other pressing work on hand.

The following grants were sanctioned during the quarter:—

- (a) A sum of Rs. 50 towards Relief work in Spain. (The grant has been paid already.)
- (b) A sum of Rs. 100 towards the equipment of the Maternity Home at Vokkaleri. (The grant has been paid already.)
- (c) A sum of Rs. 300 towards the Nursery School at Mysore conducted by Mrs. Theobald, K. I. H. etc. (The grant has been paid already.)
- (d) A sum of Rs. 200 towards the construction of the Compound wall to the Combined Dispensary and Child Welfare Centre at Nanjangud. (The amount has been set apart.)

Dr. Marian Yang, Director of the First National Midwifery School in Nanking, visited the Welfare Centres and Institutions in Mysore, Closepet, French-Rocks and Bangalore including the C. & M. Station and was greatly impressed with the advance made in the direction of popularising the maternity and child welfare movement in the State.

The State Branch forwarded its Entries to the Imperial and Vani Vilas Baby Week Challenge Shield Competitions.

The Vani Vilas Shield was awarded to Bangalore City this year by the judges in consideration of the high level of excellence attained in conducting the celebrations of Baby Week.



The suggestions offered by Major Y. V. K. Moorty for making Ambulance Training more popular and intensive in character were discussed and approved.

#### OTHER CENTRES.

The work done in the 35 centres for maternity and child welfare working in Mysore State is given in the following statement :—

*Statistics of Maternity and Child Welfare Centres in*

No.	Place	Name of Centre	No. of Clinics held		
			Ante-natal	Post-natal	Children
1	Bangalore ...	Beli-mut Creche ...	...	...	...
2	Do ...	Civic and Social Progress Association, Chamarajpet.	9	7	12
3	Do ...	Deena Seva Sangha, Malleswaram	...	...	...
4	Do ...	Mahila Seva Samaj, Basavangudi	12	12	172
5	Do ...	Child Welfare Centre, Military Area, Hebbal.	5	...	12
6	Do ...	Welfare Centre (Bangalore Woollen, Cotton and Silk Mills).	3	...	...
7	Channapatna ...	*Maternity and Child Welfare Centre	...	...	...
8	Chitaldrug ...	Do do	8	...	...
9	Chikballapur ...	Do do	...	...	...
10	Chikmagalur ...	Do do	1	...	1
11	Devanhalli ...	Do do	...	...	...
12	French-Rocks ...	Do do	...	...	...
13	Hassan ...	Do do	11	...	13
14	Kolar Gold Fields†	Do do	...	...	...
15	Mysore ...	Civic and Social Progress Association	5	...	12
16	Do ...	Vani Vilas Maternity and Child Welfare Centre, Vani Vilas Hospital.	29	...	13
17	Do ...	Gajasala Maternity and Child Welfare Centre.	...	...	...
18	Do ...	Sri Krishnarajendra Mills' Creche	...	...	...
19	Do ...	Sisuvihar (Toddler's School)	...	...	...
20	Do ...	Vocational Institute for Women (Toddler's School).	...	...	...
21	Do ...	Toddler's School in Gajasala Centre	...	...	...
22	Do ...	Do in Nanjaraja Bahadur Chattram.	...	...	...
23	Do ...	Do in Kantharaj Urs Chowk.	...	...	...
24	Do ...	Mallamma's Maternity and Child Welfare Centre.	...	...	...
25	Do ...	Devaraja Centre	...	...	...
26	Do ...	Savoy Maternity and Child Welfare Centre.	...	...	...
27	Do ...	Subramanyam Centre	...	...	...
28	Do ...	Sri Vani Vilas Milk Centre	...	...	...
29	Mandagadde ...	Mission Centre	...	...	...
30	Nanjangud ...	Maternity and Child Welfare Centre.	...	...	...
31	Shimoga ...	Ante-natal and Baby Clinic, Methodist Mission.	13	13	13
32	Do ...	Lady Mirza Ismail Milk Centre	...	...	3
33	Sivasamudram	Maternity and Child Welfare Centre	...	...	...
34	Tirthahalli ...	Mission Centre	...	...	...
35	Tumkur ...	Bathlur Baby Clinic, Methodist Mission.	2	...	7
Total ...			98	32	258
			128	55	309

\* No child welfare work is attended to here.

† Not received.





**BUREAU OF EPIDEMIOLOGY.**

B. ANANTHASWAMI RAO, B.SC., M.B.B.S., M.P.H.,

*Superintendent.*

During the quarter the Superintendent visited 16 places in four districts in connection with cholera investigation, malaria surveys and routine inspections of the Malaria Stations and the Hookworm Unit.

**(a) Malaria Stations.**

The quarterly spleen and parasite surveys were done in all the stations as usual. The routine control measures were carried out satisfactorily in all the stations.

In Hiriur, clearing the weeds in the river bed with the aid of elephants was tried. In the first attempt, the elephant not being trained for this work, would not up-root the weeds but only grazed on the surface which was not what was wanted. It was found that a number of deep impressions were created where the elephant was treading, creating additional breeding grounds. In view of this it was decided to attempt the training of the elephant for the work in one of the valleys behind the dispensary, where conditions were similar. With little training the weeds in this valley were cleared and the situation in respect of the weeds is being watched.

A similar experiment of weed clearing with manual labour is being tried in the Mandya Tank. A small area along the road-side margin of the tank has been cleared and as a further precaution, the whole cleared surface has been ploughed up to remove all the roots. The area first cleared is already showing signs of fresh shoots and the experiment will be watched.

As a preliminary to the grading of valleys in the three selected villages in the Mandya canal area, a small length of valley between Mandya and Kallahalli along the Mandya-Mysore road was graded and stone revetted to study the effect. This has considerably improved the conditions in this valley and work in the other three villages will soon be started.

Arrangements were made during the quarter for starting anti-malaria work in Markonhalli and old Bhadravathi town. At Markonhalli it was found that the labour camp was marked to be located next to the river bank.



As this is not desirable a suitable ground, about two furlongs away from the river margin has been selected. The construction work is expected to cover a period of five years and to employ a labour of about 3,000 when the work is in full progress. The approved anti-malaria scheme for the work, consists of a preliminary blanket treatment with atebrin of all the labour and staff for five days combined with anti-larval work for the entire period of construction.

The anti-malaria scheme for old Bhadravathi Town consists of anti-larval measures only and with the work already in progress in the Bhadravathi Iron and Steel Works Colony, this will form a complete ring protecting all the residents in the area. The area to the south-east of the Steel Works is now being opened up for the location of the Paper Mills. This area will be completely surveyed and will be linked up with the rest of the area already under larval control.

A parasite survey among infants under one year of age was undertaken during the quarter and in this connection Belur, Seringapatam and Palahalli were visited. It is proposed to repeat this for at least three other seasons so as to gain additional information in regard to the actual malaria transmission season in each of these areas studied.

*Bangalore City.*—The anti-mosquito work was continued during the quarter. The adult collections in the catching stations were 95 anophelines and 696 culicines as against 131 and 511 respectively during the the previous quarter. A number of trees in the different parts of the City were found breeding culicines in the holes within the trees. A detailed survey of the tree holes within the City has been started.

A regular inspection of the wells for *stephensi* breeding and the stocking of fish was done, and 1,415 wells were re-stocked with gambusia.

The staff in addition, attended to clearing of drains and cutting new drains for leading off stagnant water.

*Mysore City.*—The annual spleen and parasite survey of the City was done during the quarter. Malarial was used throughout the quarter.

#### (b) Central Laboratory.

The study of *A stephensi* was continued during the quarter. Experimental study of fly-breeding was started.

The conditions under which flies bred and the different types of manure as a suitable medium for egg laying were studied. A new type of flush-out latrine was designed to be fitted into the existing pit latrines so as to avoid direct pumping of night soil in these pits. Two such latrines have been installed at Chickballapur where there are a large number of pit latrines and flies are a great nuisance.

The blood slides from Hiriyur, Mysore City and Palahalli were examined in the laboratory.

#### **(c) Spleen Surveys.**

A spleen survey of Sakrepatna in Kadur Taluk was done during the quarter. This is an important irrigation area where due to malaria the town is reported to be undeveloped. During the spleen survey 66 children under 12 years of age were examined and 38 were found to have enlarged spleens, giving a spleen rate of 57.6. A detailed malaria survey of the area will be done with a view to suggest measures for the control of the disease.

#### **(d) Hookworm Campaign.**

The hookworm staff visited the villages in the Krishnarajpet Taluk doing propaganda and giving treatment. They visited 107 villages and out of a population of 34,283 treated 6,966 persons. The percentage of people treated was 20.3 and is evidently too small for yielding results expected from mass treatment. During the period the staff examined 191 faecal samples taken from persons before treatment and found 112 of them positive.

Following the treatment campaign in Periapatna Taluk the work of providing "Hagevu Type" borehole latrines for the 'treated' villages was started with two Assistant Sanitary Inspectors. The seating slabs necessary were cast at convenient centres locally. During the quarter 83 such latrines were provided for 17 villages.

#### **(e) Guineaworm Unit.**

The guineaworm staff continued their work during the quarter. During their visits 69 villages were inspected, 18 wells were chlorinated, 24 wells were restocked with fish and new nurseries were formed.



**(f) Fly Survey.**

A preliminary investigation of the fly nuisance in Davangere Town was done during the quarter. Further detailed work will be done before presenting a scheme for the abatement of this nuisance.

**(g) Control of Epidemic Diseases.**

*Cholera.* - Cholera continued to be reported from all the districts except Hassan. With the exception of Kolar and Tumkur, the others reported infection from a number of villages. Chitaldrug and Mysore Districts had the largest number of attacks and deaths. Mr. A. S. Venkatachalam was on special duty in connection with anti-cholera work in Mysore District. The total number of anti-cholera inoculations done during the quarter was 70,228.

TABLE 1.

*Spleen and Blood Examinations made in the Experimental Malaria Stations.*

Spleens	0-9			10-19			20 and over			All ages		
	No. Ex.	No. Inf.	% Inf.	No. Ex.	No. Inf.	% Inf.	No. Ex.	No. Inf.	% Inf.	No. Ex.	No. Inf.	% Inf.
Spleens not examined	...	...	...	...	...	...	...	...	...	...	...	...
Spleen Negative	150	7	4.7	10	...	...	7	...	...	167	7	4.2
Palpable ...	12	1	8.3	4	...	...	3	...	...	19	1	5.3
1	12	1	8.3	2	...	...	...	...	...	14	1	7.1
2	8	1	12.5	3	...	...	...	...	...	11	1	9.1
3	3	...	...	1	...	...	...	...	...	4	...	...
4	1	...	...	...	...	...	...	...	...	1	...	...
5	...	...	...	...	...	...	..	...	...	...	...	...
All persons with palpable Spleen.	36	3	8.3	10	...	...	3	...	...	49	3	6.1
Grand Total—All Spleens ...	186	10	5.4	20	...	...	10	...	...	216	7	3.2
Spleen Rate ...	186	36	19.4	20	10	50.0	10	3	30.0	216	49	22.7



TABLE 2.  
*Adult Catches in Control and Peripheral Areas.*

Species	Nagenhalli		Mudgere		Hiriyur		Nagoonhalli	
	Pd. zn.	Pl. zn.	Pd. zn.	Pl. zn.	Pd. zn.	Pl. zn.	Pd. zn.	Pl. zn.
A. aconitus	2	3	...	2	19	7	...	...
A. aitkenii	...	...	...	...	...	...	...	...
A. annularis	20	147	3	13	18	9	1	...
A. barbirostris	...	...	...	...	...	...	...	...
A. culicifacies	15	254	9	42	29	55	11	...
A. fluviatilis	1	65	2	17	9	21	4	...
A. hyrcanus	...	3	...	...	4	1	1	...
A. jamesii	...	7	1	23	...	1	...	...
A. jeyporiensis	...	...	36	272	...	...	...	...
A. karwari	...	...	...	...	...	...	...	...
A. lencosphyros	...	...	...	...	...	...	...	...
A. maculatus	...	...	...	...	...	...	...	...
A. minimus	...	...	...	...	...	...	...	...
A. majidi	...	...	...	...	...	...	...	...
A. pallidus	1	...	...	...	...	...	...	...
A. splendidus	1	1	...	1	...	2	...	...
A. stephensi	...	1	...	...	...	1	...	...
A. subpictus	...	251	7	36	3	17	1	...
A. tessallatus	103	1	1	9	177	246	99	...
A. turkudi	...	1	1	...	4	12	2	...
A. vagus	2	...	...	...	...	...	...	...
A. vamna	22	63	20	68	10	21	11	...
...	...	...	...	1	...	...	...	...

TABLE 3.  
*Species of Malaria Parasites.*



SPLEEN SURVEY OF MYSORE CITY.

(1930—1937.)

Mohalla	1930			1931			1932			1933			1934			1935			1936			1937		
	No. Ex.	Spl. R.		No. Ex.	Spl. R.		No. Ex.	Spl. R.		No. Ex.	Spl. R.		No. Ex.	Spl. R.		No. Ex.	Spl. R.		No. Ex.	Spl. R.		No. Ex.	Spl. R.	P. R.
I. Chamaraj Mohalla ...	163	25.2		...	...		353	5.1		332	10.2		323	9.3		294	2.0		415	2.9		288	2.7	61 9.8
II. Devaraj "	12	...		...	...		96	...		187	3.7		96	3.1		126	0.0		224	3.1		145	4.1	26 11.5
III. Fort "	130	13.1		...	...		156	8.9		128	6.2		112	1.8		140	7.1		203	4.4		151	4.6	25 12.0
IV. Krishnaraj "	182	11.0		...	...		483	3.3		357	7.2		318	3.7		417	2.1		535	2.6		384	2.3	76 6.6
V. Laskar "	84	3.5		...	...		154	1.9		232	6.9		227	7.9		371	1.9		190	0.5		203	0.4	38 2.6
VI. Mandi "	91	4.4		...	...		315	3.8		343	4.3		304	4.9		295	2.7		285	1.7		465	2.2	84 5.9
VII. Nazarbad "	115	9.6		...	...		160	2.5		181	4.4		151	4.6		155	3.2		146	2.7		53	3.7	9 0.0
Total ...	777	11.7		...	...		1,717	3.9		1,760	6.3		1,525	5.7		1,798	2.5		1,998	2.6		1,689	2.6	319 7.2

## BUREAU OF LABORATORIES.

### (a) Public Health Institute.

G. M. DOMINICK, M.R.C.S., D.P.H.,

*Superintendent.*

Mr. C. V. Natarajan was in charge of the Institute up to June 10, when he handed over charge to Mr. G. M. Dominick. Mr. G. M. Dominick is also the Chemical Examiner to Government from June 1926.

*Bacteriological Section.*—As compared with 2,492 in the previous quarter, 2,454 specimens were examined in this section in the quarter under report :—

No.	Particulars	Positive	Negative	Total
1	Blood for Wssermann reaction...	367	1,246	1,613
2	Do   Widal                   ...	40	44	84
3	Do   Malarial Parasites   ...	15	9	25
4	Do   C. S. F.               ...	...	...	2
5	Do   Vondenburgh's test ...	...	...	1
6	Do   Blood count           ...	...	...	1
7	Smear for B. Pestis       ...	3	1	4
8	Do   G. C.                 ...	...	5	5
9	Throat smear for penumococci	...	1	1
10	Prostatic smear for G. C.   ...	1	...	1
11	Nasal smear for L. B.       ...	...	1	1
12	Motion for cholera         ...	31	19	50
13	Do   ova                   ...	5	4	9
14	Urine                       ...	...	...	10
15	Vomit for Cholera           ...	2	5	7
16	Sputum for T. B.           ...	3	7	10
17	Aerated Waters             ...	...	...	2
18	Catheter specimen         ...	...	...	1
19	Disinfectants              ...	...	...	6
20	Aspirated fluid             ...	...	...	2
21	Water                       ...	...	...	567
22	Vaccine from Vaccine Institute.	...	...	53
Total           ...		467	1,342	2,454



*Chemical Section.*—In the Chemical Section 555 specimens were examined against 679 in the previous quarter:—

No.	Item	April to June 1937
1	Water for Residual chlorine ... ..	496
2	Water for potable purposes ... ..	22
3	Light Caoutchoucine ... ..	1
4	Sewage ... ..	2
5	Sodium Arsenite ... ..	1
6	Pyridine ... ..	1
7	Perfect Pain Balm ... ..	1
8	Ghee ... ..	1
9	Blood sugar estimation ... ..	3
10	Incrustation material ... ..	2
11	Phenyle ... ..	5
12	Essences ... ..	4
13	Wood Naptha ... ..	5
14	Anti-cholera vaccine ... ..	3
15	Media for nitrogen estimation ... ..	4
16	Spent wash for Alcohol content ... ..	1
17	Oil seeds of Hydrocorpus for oil content ... ..	1
18	Arrack ... ..	1
19	Silver shine ... ..	1

*Medico-legal Section.*—Fifty-seven (57) cases with 189 articles were examined as shown below:—

No.	Particulars	No. of cases	No. of articles
1	Mammalian Blood ... ..	22	83
2	Suspected human poisoning ... ..	23	72
3	Abortion ... ..	3	15
4	Rape ... ..	7	12
5	Cattle poisoning ... ..	1	6
6	Explosive ... ..	1	1
Total ... ..		57	189

Results of examinations are noted below :—

<i>No. of cases.</i>	<i>Detected.</i>
19	Mammalian blood.
1	Metallic (Brass) poisoning.
1	Nitric Acid.
1	Morphine.
1	Mercury.
1	Hydrochloric and Sulphuric acids.
1	Opium.
1	Sulphuric acid.
2	Arsenic.
4	Spermatozoa.
1	Oleander.
1	Potassium Nitrate, charcoal and sulphur.

*Vaccines.*—During the quarter, the following quantities of vaccine were issued :—

<i>Vaccine.</i>	<i>No. of c. c.</i>
Cholera ... ..	1,18,090
T. A. B. ... ..	369

*Fees received.*—During the quarter, the collections amounted to Rs. 3,666 as compared with Rs. 875 in the previous year :—

<i>Particulars.</i>	<i>Amount.</i>
	Rs.
1. Bacteriological Section ... ..	18
2. Chemical do ... ..	35
3. T. A. B. Vaccine ... ..	63
4. Cholera do ... ..	3,550
Total ... ..	3,666

#### (b) Vaccine Institute.

J. A. ISWARAMURTHY, B.A., L.M.S., B.S.SC.,  
*Superintendent.*

Chloroformed glycerine lymph was issued for general issue in the State. Seventy (70) glycerine samples were examined bacteriologically 219 times and their potency tested in serial dilution on the rabbit and clinically in the Model Range. Only potent lymph found free from pathogenic organism was issued.



The following is a summary of work done at the Institute:—

<i>Particulars.</i>	<i>Number.</i>
Calves waiting on April 1, 1937 ...	10
„ replaced against those returned during the previous quarter. ...	...
„ purchased ...	30
„ waiting died ...	...
„ available for vaccination ...	40
„ waiting on July 1, 1937 ...	12
„ vaccinated ...	28
„ vaccinated and uncollected ...	1
„ vaccinated and rejected ...	...
„ vaccinated and died (uncollected) ...	...
„ vaccinated and whose pulp was collected	28
„ vaccinated and remained over for collection of lymph on July 1, 1937.	1
Lymph produced during the quarter was 11,680 grains of pulp or equivalent to ...	146,000 Cases
„ remained on 1st April 1937 enough for ...	363,260 „
„ produced during the quarter enough for ...	146,000 „
„ available enough for ...	509,260 „
„ issued during the quarter enough for ...	79,605 „
„ wasted in loading and storing ....	...
„ utilised for seed and test enough for ...	5,309 „
„ issued, wasted and utilised for seed, etc.	84,914 „
„ remained over on July 1, 1937 ...	424,436 „
	Rs.
Income realised including arrears as per accounts of the Institute.	5,879
Expenditure during the quarter ...	4,783
Candidates trained in vaccination ...	Nil
„ granted qualifying certificates ...	Nil

*Model Range.*—A total of 263 primary vaccinations were done with glycerine lymph of varying age periods for clinical test before releasing for general issue and were observed to give a success rate of 96 per cent. The oldest glycerine used in this range had been preserved for seven months and five days from the date of production before use and freshest for about two months and five days, the average period being four months and eighteen days.

## BUREAU OF HEALTH EDUCATION.

E. ANANTHA RAO, B.Sc., M.B.B.S., D.P.H.,  
*Superintendent.*

During the quarter, a total of 45 cinema shows on health subjects were given to an approximate audience of 15,400 persons. The cinema staff travelled, as usual, in the departmental van over a total distance of 2,136 miles. At the following places cinema shows were held during the quarter:—

<i>Place of Show.</i>	<i>No. of Shows.</i>
1. The Bangalore Woollen, Cotton and Silk Mills, in connection with Health and Baby Week.	2
2. Hebbal Military area, Bangalore City	2
3. Bangalore City	9
4. Mysore City in connection with the Swadeshi Exhibition.	3
5. Mysore City for the Mysore Horse	2
6. Dodballapur in connection with the Summer School	3
7. Shiralkoppa under the auspices of the Karnataka Sangha.	1
8. Miscellaneous, in parts of Bangalore, Mysore, Kolar and Shimoga Districts.	23
Total	45

The Publicity Officer visited two Government Upper Primary Schools and gave health talks to teachers and pupils. He visited two shandies and distributed health leaflets. He also delivered 16 lectures on the aims and objects of the Red Cross Movement. At the request of the Station Staff Officer, Bangalore, the Superintendent delivered a lecture at the Public Health Institute on "Village Sanitation and its Relation to Health" for the benefit of a couple of Military Officers.

Five health exhibitions on a small scale were organised during the quarter. Posters and charts on health subjects were lent to the Health Officer, Bangalore City, for arranging a Health Exhibition in connection with the Health and Baby Week held in June 1937 under the auspices of the Bangalore Woollen, Cotton and Silk Mills. As in the previous years, a Health Exhibition was organised at the Swadeshi Exhibition, Mysore.



During the quarter, five articles on health subjects were issued for publication in the local English and Kanarese papers. The Milk number of "The Mysore Arogya" (March 1937) was printed and published, and the Editor, Viswakarnataka, reproduced the full text of this in one of the weekly issues of his journal.

The Editor, "Tai-Nadu" was supplied with a set of departmental health posters and leaflets and other printed propaganda materials. He periodically published extracts from these on plague, typhoid, hookworm, malaria and tuberculosis, etc.

About 140 posters, 6,262 leaflets and 379 picture-pamphlets on health subjects, published by the department were distributed during the quarter under review.

A beginning has been made of a permanent Health Exhibition in Mysore City, accommodation being found for it in the Exhibition Buildings. The co-operation of the staff of the Nagenhalli Malaria Station was sought. The exhibits are displayed in four sections: (1) Sanitary Engineering, (2) Maternity and Child Welfare, (3) Malaria, and (4) General Hygiene. New models at a total cost of Rs. 1,410 have been purchased from the Calcutta Model Works under Government Order No. G. 9102-4—P. H. 61-36-8, dated May 17, 1937.

In order to enable the cinema staff, when on tour in rural areas, to fit up small poster exhibitions in the villages, a set of departmental posters, mounted and framed with thick celluloid sheets instead of glass covers, are kept ready. In addition to these, three models on the fly-larval trap, the model restaurant and the bore hole latrine have also been prepared for show.

## **BUREAU OF RURAL HEALTH.**

### **(a) Health Training Centre, Closepet.**

T. CHANDRASEKHARAIYA, B.A., M.B.B.S., M.P.H.,

*Health Officer.*

During the quarter, all the divisions had the services of a public health nurse each. Three new midwives were appointed and posted to the divisions, there being 9 midwives out of 10 sanctioned, working in the Centre. The vaccinators were appointed on a temporary basis. During the first 12 months 1,989 primary and 20,021



re-vaccinations were done and it was felt that there was no necessity to continue the services of all the five vaccinators. Two of these posts were therefore retrenched from June 1, 1937.

During the quarter, there were three attacks and three deaths due to diarrhoea and vomiting which were clinically diagnosed and reported as cholera. Samples of excreta from all those cases were sent to the Public Health Institute for bacteriological examination.

Thirty-three (33) cases of dysentery with five deaths were reported but the incidence was sporadic ; 35 cases of measles with 1 death, 7 cases of chicken-pox with no deaths, and 9 cases of pulmonary tuberculosis with no deaths were registered during the quarter.

A total of 635 anti-cholera inoculations were given in the villages suspected to be infected and five houses were disinfected in this connection.

*Health Survey.*—The house survey of the area was practically completed by the end of the quarter, 2,580 houses being surveyed as against 1,955 houses in the previous quarter.

*Propaganda.*—The Sanitary Inspectors paid 607 visits to their villages and gave 1,846 talks on various health subjects and approximately 25,000 people attended these talks.

*Chlorinations.*—According to a routine, all the drinking water wells and step wells were chlorinated during the quarter. Of 1,397 wells chlorinated, 530 are private wells and 98 are public wells.

*Vital Statistics.*—All the villages were visited by the Sanitary Inspectors in the second week of every month for the collection of vital statistics and checking of Birth and Death Registers. A total of 78 births out of 476 and 16 deaths out of 208 had escaped registration. A marked improvement in the registration of deaths is noticed. Lists of the detected births and deaths were sent to the Revenue Sub-Division Officer for necessary action. The public health nurse investigated and reported 6 maternal deaths and 29 infant deaths.

*Vaccination.*—Intensive vaccination work was carried on, as usual, in all the areas of the Unit ; 8,543 vaccinations as against 6,210 during the previous quarter were done. Of these, 730 were primary and 7,740 re-vaccinations. The former gave a success rate of 90·5 per cent and the latter 30·5 per cent.



*Maternity and Child Welfare.*—The public health nurses completed the survey of their Divisions and started systematic work in all their areas. In the month of June, a weekly maternity and child welfare clinic was started at Bannikuppe in 'B' Division. The Monday and Friday clinics at Closepet were held regularly. There were 25 clinics during the quarter at which 63 pre-natals, 108 infants, 138 pre-school children were examined.

The five nurses during their 4,748 home visits examined and registered 1,659 pre-natals, 2,152 infants and 2,430 pre-school children. They examined 156 samples of urine.

*Midwives.*—The midwives attached to this Unit conducted 198 deliveries during the quarter.

Of 429 births reported 198 or (46·2 per cent) were conducted by the unit midwives and 231 or (53·8 per cent) by others.

During the quarter, 1,045 post-natal visits were given by the midwives giving an average visit of 4·3 per case as against 5·8 in the previous quarter.

*Health Leagues.*—The progress in organising health leagues is rather slow. It is the object of the Unit to start one demonstration health league in each of the Divisions to start with. During the quarter a second health league was started at Vondraguppe in the "E" Division. The people have started constructing latrines in individual houses. The activities at Archakarahalli, where the first health league was started, are being continued.

The drinking water well at Archakarahalli was improved and a pump has been fitted to it.

*Laboratory.*—Three (3) blood samples were sent to the Public Health Institute for Wassermann re-action; 13 blood smears were examined at the office for malarial parasites; 2 sputum smears for T. B., and 2 smears for G. C., 10 samples of stools for ova, and 10 urine samples.

At the office 58 patients turned up for consultation. After examination, they were all given needful advice.

**(b) Rural Health Unit, Mandya.**

M. NARAYANA IYENGAR, L.M.P.,

*Officer in charge.*

There was no change in the personnel of the Unit. The midwife stationed at Mandya was on privilege leave

for one month and the full time vaccinator was also on privilege leave for one month and a half. The Assistant Sanitary Inspector, Kottatti Range, is given privilege leave from June 2, for two months.

*Epidemics.*—The Unit area was free from plague and small-pox during the quarter.

A total of 241 primary and 19 re-vaccinations were performed during the quarter, the success rates being 75·2 and 6·3 per cent, respectively.

As many as 30 villages in the Unit area were infected with cholera and a total of 130 attacks with 82 deaths were reported. Nine villages outside the Unit area were infected where 107 attacks with 61 deaths were reported. All the infected villages were visited for taking preventive measures. A total of 12,640 anti-cholera inoculations in the Unit area and 3,493 outside the Unit area were performed; and 1,028 drinking water supplies were chlorinated, 357 houses were disinfected.

Leaflets on cholera and its prevention were distributed in the infected and the neighbouring villages. The staff gave during their rounds 844 talks to about 6,000 persons.

*Clinics.*—No clinics were held during the quarter on account of cholera epidemic work, 19 persons were examined at the office for various ailments and remedial measures were suggested.

*Typhoid.*—Two cases of typhoid with one death were recorded in Mandya Town. One sample of blood was sent for widal reaction and the result was negative. A total of 14 anti-typhoid inoculations were given.

*Midwives.*—The two midwives attached to the Unit paid 132 visits to 24 villages in their jurisdiction. They paid 627 pre-labour, 146 after labour, and 22 miscellaneous visits; 736 cases old and new came under their care. They conducted 11 labour cases during the quarter as against 11 in the previous quarter.

*Laboratory.*—One spleen smear from a dead rat was examined for B.P. at the Unit laboratory. Five samples of blood for Wassermann, one sample of blood of Widal test and 19 samples of motion in peptone water for cholera vibrios were sent from the Unit to the Public Health Institute, Bangalore for examination.

*Dog Destruction.*—In Mandya Town 22 stray-dogs and 25 in Maddur Town, were destroyed.



*Bore-hole Latrines.*—Six private bore-hole latrines that were bored during the last quarter at Alkere are yet to be completed with super-structures. The parties concerned are being persuaded to complete the same and make use of them. Six bore-hole latrines were bored and slabs mounted at the cooly camps near the Sugar Factory.

*General Sanitation.*—The sweepers were engaged for intensive cleaning work in all the cholera infected villages; 64 soak pits were put up in different villages to prevent sullage water flowing into the streets.

During their rounds to the villages, individual houses were visited by the Unit staff and suggestions for improvements were made. One Mayamma Puttegowda of Gotalapur village has fixed up six windows to his newly constructed house in response to such advice and has further promised to improve the flooring of the cattleyard with stone-slabs and cement pointing. Another man at Bilidegalu village, Karigowda by name, has introduced two windows to his house which is just completed.

New houses in the same old fashion are coming up in many of the villages in the Unit area. The Chairmen of the respective Panchayets issue licenses. In most of the cases, licenses are issued only after the buildings are completed. Unauthorised constructions are being brought to the notice of revenue authorities. It would be better if the Health Unit is consulted by the Chairman, before licenses are issued for construction of new houses.

## BUREAU OF SANITARY ENGINEERING.

N. KRISHNIENGAR, B.E.,  
*Sanitary Engineer.*

Mr. B. R. Garudachar was in charge of the Bureau till April 26, 1937, when he handed over charge to Mr. N. Krishniengar.

The Bureau consists of five sections in addition to the two Sub-Divisions, one at Mysore and one at Bethamangala for maintenance of water supply.

The five sections are :—

- (1) Water supplies including original construction works and annual maintenance of existing installations all over the State excepting Bangalore City,

- (2) Drainage works throughout the State,
- (3) Sanitary fittings including house connections and bore-hole latrines,
- (4) Town planning schemes, and
- (5) Deep bore-holes for supply of protected water supplies in Towns and Minor Municipalities.

### 1. WATER SUPPLY.

Previously 50 towns have been provided with water supply. During this quarter water supply plants to three more towns, *viz.*, Kunigal, Mandya and Closepet have been installed and service given. Of these installations, the Bureau is maintaining the water supply of 14 towns including Vani Vilas Water Works, Mysore, K. G. F. Water Works, Bethamangala and Shimoga Water Works. The appended statement shows the works under progress and the outlay incurred during the year 1936-37.

### 2. DRAINAGE.

Laying the main sewers and giving house connections to the sewers in connection with Bangalore City underground drainage system, are under progress.

Drainage works under progress and outlay incurred are noted in the annexed statement.

Comprehensive schemes for providing drainage for (a) Chitaldrug, (b) Bhadravati were prepared during the quarter.

Part scheme for constructing drains in Doddballapur Town was also prepared.

Buildings for quarters for Midwives and Sanitary Inspectors of the Health Training Centre at Closepet, have been constructed and all the works are completed.

### 3. SANITARY FITTINGS AND BORE-HOLE LATRINES.

Repairs and maintenance works to the sanitary installations of Government Buildings in Mysore and Bangalore Cities were attended to in addition to the appended list of works under progress. The statement shows the outlay during the year 1936-37.

During the quarter ten bore-hole latrines were constructed in Vidhuraswatha.



#### 4. TOWN PLANNING.

Kengeri village was surveyed for rural reconstruction and village improvements.

Four extension layout plans of towns were prepared and forwarded to the Municipalities.

#### 5. BOREWELLS.

During this quarter, 4 borewells were newly started. In all, 15 wells were under progress, out of these, seven wells are completed.

#### 6. ANALYSIS OF WATER SAMPLES.

A total of 52 samples of water, bacteriological 40 and chemical 12, were analysed during the quarter.

*List of places where works are under progress in various stages.*

No.	Place	Amount of Estimate in rupees	Out-lay to the end of June 37 in rupees	Remarks
(1) WATER SUPPLY.				
(a) Capital Works.—				
1	Chintamani ...	24,806	20,456	Completed.
2	Closepet ...	25,850	20,883	
3	Kunigal ...	10,688	11,594	
4	Whitefield ...	19,821	14,576	
5	Chikballapur ...	3,930	3,833	Do
6	Vidhuraswatha Jatra	2,930	2,075	Do
7	Davangere ...	1,99,000	1,93,280	Do
8	Jagalur ...	2,700	2,323	
9	Chitaldrug ...	12,930	16,889	
10	Constructing filter for Chitaldrug Town.	20,000	3,800	
11	Improving Dodballapur water works.	1,645	1,023	Do
12	Mandya ...	61,875	42,801	Do
13	Ganjam ...	19,988	13,611	
14	Arsikere ...	33,110	25,044	
15	Hesikote ...	17,440	6,226	
16	Chickmagalur ...	71,381	5,789	Do
17	Constructing settling tank, Nanjangud.	8,000	5,619	
18	Melkote ...	10,000	2,813	
19	Laying mains from Chamaraja Road to Krishnaraja Road, Chamaraja Agrahar, Kannegowdan koppal, Mysore.	8,830	7,942	
20	Jatra at Chunchankatte, Krishnaraja Nagar.	7,222	2,111	Do
21	Mudukatore Jatra ...	8,013	6,283	
22	Hemagiri Jatra ...	7,007	1,887	
23	Water connection to Parsi Burial Ground, Mysore.	700	392	
24	Kumbarhally Village, Nanjangud.	...	765	Do
25	Fig Cultivation at Ganjam village.	12,500	4,927	
26	Fire Hydrants to the Carriage Workshop, Mysore.	2,024	950	



No.	Place	Amount of Estimate in rupees	Out-lay to the end of June 37 in rupees	Remarks
27	Seringapatam water works.	3,375	248	Completed. Do
28	Arsikere water works	3,610	683	
29	Ghati Subramanya Jatra.	730	392	
30	Kunigal water supply	2,025	250	Do
31	Erecting 3 tanks in the top of the Medical College, Mysore.	1,208	736	
32	Erecting a galvanised tank on the terrace of Park House, Mysore.	349	287	
<i>(b) Annual Maintenance Works.—</i>				
1	A. M. of Dobballapur water works.	2,750	2,688	Completed.
2	„ of Vani Vilas water works, Mysore.	1,45,803	1,45,803	
3	„ of Shimoga water works.	23,786	10,577	Establishment and supervision charges to be adjusted.
4	„ K. G. F. water works, Bethamangala.	1,03,638	93,367	Do
5	„ Robertsonpet and Andersonpet water works.	26,373	26,416	
6	„ Holenarsipur water works.	4,383	3,478	Completed.
7	„ Channapatna water works.	4,050	3,744	Do
8	„ French Rocks water works.	1,915	232	
9	„ Konanur water works.	2,813	1,658	Do
10	„ Chikkachanna Nanjappa Setty water works.	4,160	4,600	Do
11	„ Chitaldrug water works.	2,260	3,319	Do
12	„ Satnur water works.	600	459	Do
13	„ Krishnaraja Nagar water works.	2,493	1,934	
14	A. M. of Santhemarahally water works.	1,115	863	

No.	Place	Amount of estimate in rupees	Outlay to the end of June 37 in rupees	Remarks
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## (2) DRAINAGE.

1	Bangalore ...	2,61,385	2,34,826	
2	Chamarajnagar 3rd stage.	10,500	6,630	
3	Banavar ...	4,028	3,181	Completed.
4	Tarikere 2nd stage ...	20,000	13,788	Do
5	Dodballapur ...	6,250	2,252	
6	Chintamani ...	3,000	974	
7	Goribidnur ...	6,854	3,833	
8	Channapatna ...	1,000	1,143	Do
9	Government Stud Farm, Kunigal.	1,300	1,644	Do
10	Channarayapatna ...	3,000	1,496	

## (3) SANITARY FITTINGS.

1	Sanitary Installation of <i>Dharmapravarta</i> Sajjan Rao's Obstetric Isolation Hospital, Bangalore.	6,258	4,461	Works completed.
2	New Mental Hospital	14,600	...	Under progress.
3	Central College Home	1,945	1,544	Completed.
4	Telephone Exchange...	1,120	303	Under progress.
5	Victoria Hospital ...	6,345	3,623	Do
6	Maharaja's College Hostel Warden's Quarters, Mysore.	760	684	Completed.
7	New Railway Offices, Mysore.	4,200	2,213	
8	New Electrical Offices	472	465	Do
9	Race Camp, Mysore ...	160	160	Do
10	Maharani's Women's Hostel.	535	181	Do
11	Railway Central Workshop, Mysore.	6,850	4,957	Work completed.
12	Maternity and Child-welfare Building at Nanjangud.	330	327	Completed.
13	Sri Narasimharaja Hostel, Kolar.	7,000	4,058	
14	Cricket Pavilion of the Maharaja's College, Mysore.	753	753	Completed.
15	Echo Bank, Mysore ...	240	207	Do
16	Wards Nos. 5 and 6, Victoria Hospital.	834	455	
17	Law Court Building, Mysore.	2,993	2,761	Work completed.



No.	Place	Amount of estimate in rupees	Outlay to the end of June 37 in rupees	Remarks
18	Repairing sanitary installation in Krishna-rajendra Hospital, Mysore.	830	341	Completed.
MISCELLANEOUS.				
1	Staff Quarters of Health Unit, Closepet centre.	6,670	8,109	Completed. Revised estimate submitted.
2	An Office building at Bethamangala.	4,120	892	
3	Bore-hole Latrines	...	1,871	

## BUREAU OF VITAL STATISTICS.

E. R. SUNDARARAJAN, M.A. (Hons.),

*Superintendent.*

Analysis of statistics of births and deaths received from the districts shows continued incompleteness in the returns. Until the centralization of the compilations is effected early, in accordance with the recommendations of the Mysore Committee of Vital Statistics no improvements will be possible.

### (a) Population.

The estimated population of the Districts and Cities as on July 1, 1937, are :—

<i>District or City.</i>	<i>Estimated Population.</i>
Bangalore ...	1,191,051
Chitaldrug ...	709,110
Hassan ...	605,214
Kadur ...	356,753
Kolar ...	885,195
Mysore ...	1,579,879
Shimoga ...	537,480
Tumkur ...	917,706
Total (Mysore State)	6,782,388
Bangalore City...	206,670
Mysore City ...	121,933
Kolar Gold Field ...	83,460

**(b) Parturition Statistics.**

Statistics of parturition cases conducted in the 31 Maternity Hospitals and Female Dispensaries were collected as usual and the compiled figures are given below:—

*Parturition Cases conducted in Maternity Hospitals  
and Female Dispensaries.*

No.	Place	Institutions	Parturition cases conducted	Deaths from Child-birth
1	Bangalore City	... Vani Vilas Hospital ...	900	6
2	Mysore City	... Do ...	479	9
3	Do	... Holdsworth Memorial Hospital. ...	123	1
4	Kolar Gold Field	... Maternity Hospital ...	334	1
5	Anekal	... Female Dispensary ...	3	...
6	Channapatna	... Do ...	Not Received.	...
7	Chikballapur	... Do ...	2	...
8	Chikmagalur	... Maternity Hospital ...	65	4
9	Chintamani	... Female Dispensary ...	2	...
10	Chitaldrug	... Do ...	26	1
11	Davangere	... Maternity Hospital and Female Dispensary. ...	110	2
12	Hassan	... Female Dispensary and Maternity. ...	29	...
13	Do	... Red Fern Memorial Hospital. ...	Not Received.	...
14	Hebbal	... Female Dispensary ...	3	...
15	Hole-Narsipur	... S. N. Maternity Hospital ...	48	...
16	Hunsur	... Female Dispensary ...	3	...
17	Kolar	... Female Dispensary ...	16	...
18	Do	... E. T. C. Memorial Hospital. ...	35	...
19	Koppa	... Female Dispensary ...	2	...
20	Krishnarajnagar	... Female Dispensary and Maternity. ...	36	...
21	Mudgere	... Combined Dispensary ...	...	...
22	Mandagadde	... Maternity Hospital ...	9	...
23	Nanjangud	... Female Dispensary ...	60	...
24	Sagar	... Do ...	5	1
25	Saklespur	... Women and Children Hospital. ...	13	...
26	Shimoga	... Maternity Hospital ...	67	...
27	Sira	... Female Dispensary ...	4	...
28	Tarikere	... Do ...	97	...
29	Tiptur	... Maternity Hospital ...	22	...
30	Tirthahalli	... Do ...	18	...
31	Tumkur	... Do ...	62	2
Total (Mysore State)			2,583	27

It will be seen that during the quarter, 2,583 labour cases were conducted, the number of maternal deaths (mortality of mothers at or within 14 days of labour) being 27. The computed average maternal mortality rate is 10·46 per 1,000 births as compared with 16·46 in the previous quarter.

**(c) Epidemic Diseases.**

Attacks and deaths reported under Plague, Small-pox and Cholera are given below for each district and city, with the number of villages and the population affected.



District or City	Population affected	Number of villages affected	Plague		Population affected	Number of villages affected	Small-pox		Population affected	Number of villages affected	Cholera	
			A.	D.			A.	D.			A.	D.
Bangalore	2,10,026	8	22	9	2,06,670	1	3	0	2,24,140	29	104	62
Chitaldrug	...	...	...	...	6,802	10	98	14	94,292	85	551	267
Hassan	10,347	7	18	7	...	...	...	...	187	2	14	12
Kadur	2,169	3	21	17	...	...	...	...	21,039	20	80	45
Kolar	1,11,575	19	60	36	1,04,067	8	79	12	...	3	5	3
Mysore	1,28,506	12	72	48	1,24,171	3	17	3	2,05,864	86	585	341
Shimoga	4,872	1	1	1	4,611	4	16	1	49,580	30	185	99
Tumkur	...	...	...	...	3,379	7	27	2	201	2	17	12
Total (Mysore State)	4,67,495	50	194	118	4,49,700	33	240	32	5,95,303	257	1,541	841
Total (Cities)	4,12,063	...	15	7	4,12,063	...	19	0	3,28,603	...	30	16
Bangalore City	2,06,670	...	5	2	2,06,670	...	3	0	2,06,670	...	7	3
Mysore City	1,21,933	...	3	2	1,21,933	...	5	0	1,21,933	...	23	13
Kolar Gold Field	83,460	...	7	3	83,460	...	11	0	...	...	...	..

*Plague.*—During the quarter, a decline was observed in the incidence of plague, the reported figures being 194 attacks with 118 deaths in 50 localities, as compared with 342 attacks with 216 deaths in the preceding quarter. The districts of Mysore and Kolar contributed a total of 132 attacks with 84 deaths. Chitaldrug and Tumkur districts were reported to be free, and Shimoga district reported a single death.

*Small-pox.*—A further decline in the incidence of small-pox was reported during the quarter, there being only 240 attacks with 32 deaths in 33 villages and towns. Hassan and Kadur districts did not report even a single case of small-pox.

*Cholera.*—In view of the forecast of a general spread of the disease, extensive preventive measures, including the prohibition of fairs and festivals, were taken in the previous quarter. It may be stated that as a consequence the further rise of the incidence was to a large extent kept under control. During the quarter 1,541 attacks with 841 deaths were reported as against 1,845 attacks and 992 deaths in the previous quarter, the districts chiefly affected being Mysore and Chitaldrug. In the former district 585 attacks and 341 deaths occurred and in the latter 551 attacks and 267 deaths, respectively.

Bangalore City reported 7 attacks with 3 deaths and Mysore City reported 23 attacks with 13 deaths, Kolar Gold Field, remaining free from the disease.

**(d) Vital Statistics reported for the Previous Quarter  
(January—March 1937).**

*Births.*—In the quarter under report a total of 31,960 births were reported (excluding 516 still-births) giving a crude birth-rate of 19·01 per mille of population as compared with 20·98 in the previous quarter. The rates in the districts varied from 23·78 in Chitaldrug district to 13·28 in Kadur district.

Bangalore City had a rate of 35·97, Mysore City 30·72 and Kolar Gold Field 52·17, the average birth-rate in city areas being 37·77 as against 41·78 in the previous quarter.

*Still-births.*—During the quarter, 516 still-births were reported as against 529 in the previous quarter giving a still-birth rate of 15·89 per 1,000 births. Of



these still-births 136 (or 26·4 per cent) were reported from the three cities.

*Deaths.*—The number of deaths reported under all causes (excluding still-births) was 25,317, giving a crude death-rate of 15·06 per mille of population as against 15·65 in the previous quarter. The rates varied from 30·03 in Shimoga district to 12·53 in Kolar district.

The average death-rate in the case of Cities was 30·26 per mille of population, the rate in Bangalore City being 28·16, in Mysore City 30·80 and in Kolar Gold Field 34·54.

As compared with the previous quarter the following were the number of deaths reported under the chief causes :—

<i>Cause of Death.</i>			<i>Current Quarter Jan.—Mar. 1937.</i>	<i>Previous Quarter Oct—Dec. 1936.</i>
1.	Plague	...	409	602
2.	Small-pox	...	398	391
3.	Cholera	...	2,031	1,153
4.	Malaria	...	7,884	8,495
5.	Typhoid	...	1,264	1,396
6.	Other Fevers	...	2,767	3,067
7.	Dysentery and Diarrhoea	...	1,512	1,892
8.	Respiratory Diseases	...	1,359	1,294
9.	Consumption	...	1,122	1,319
10.	Leprosy	...	176	240
11.	Child-birth	...	588	616
12.	Suicide	...	55	78
13.	Drowning	...	191	236
14.	Wounds and Accidents...	...	180	186
15.	Killed by Wild Beasts	...	15	9
16.	Snake-bite	...	26	54
17.	Rabies	...	27	13
18.	All Other Causes	...	5,313	5,266
Total			25,317	26,307

As suggested in the previous quarterly report, a consideration of the relative magnitudes of the number of deaths reported under these causes indicates that the quality of the reporting by Patels is very satisfactory.

*Maternal Mortality.*—(*Child-birth*).—During the quarter, a total of 588 deaths of mothers at child-birth were reported as against 616 in the previous quarter, giving a maternal mortality rate of 18·10 per 1,000 total births as compared with 17·21 in the previous quarter.

This figure compares favourably with that of the maternity hospitals.

*Infant Mortality.*—The number of deaths of infants under one year of age reported during the quarter was 2,773 giving an infant mortality rate of 118·05 per 1,000 live births as against 120·64 in the previous quarter. The rates varied in the districts from 164·41 in Shimoga district to 83·14 in Mysore district.

The average City-rate was 183·51, as compared with 166·35 in the preceding quarter. Bangalore City had a rate of 189·50, Mysore City 151·42 and Kolar Gold Field 200·55.



TABLE 1.  
*Reported number of Births, Deaths and Infant Deaths in the Districts and Cities of the  
Mysore State in the quarter, January—March 1937.*

District	Estimated population as on July 1, 1937	Reported births (Excluding still-births)				Crude birth rate	Reported deaths (Excluding still-births)				Crude death rate	Reported deaths of infants under one year of age					Still births
		Jan.	Feb.	Mar.	Total		Jan.	Feb.	Mar.	Total		Feb.	Mar.	Total	Infant mortality		
Bangalore ...	11,73,609	2,030	1,990	1,931	5,951	20.82	1,532	1,195	1,306	4,033	13.75	345	243	168	756	127.04	116
Chitaldrug...	7,00,826	1,411	1,370	1,385	4,166	23.78	903	660	744	2,307	13.17	199	141	128	468	112.38	65
Hassan ...	6,03,909	952	830	956	2,738	18.13	884	710	726	2,320	15.37	140	86	88	314	114.68	60
Kadur ...	3,55,328	372	333	475	1,180	13.28	398	354	443	1,195	13.45	58	33	49	140	118.64	35
Kolar ...	8,79,494	930	1,299	1,344	3,573	16.25	861	909	985	2,755	12.53	177	208	138	523	146.38	37
Mysore ...	15,69,039	2,145	2,372	2,303	6,820	17.37	1,837	1,725	2,267	5,829	14.86	246	179	142	567	83.14	73
Shimoga ...	5,34,722	956	866	982	2,804	20.98	1,466	1,173	1,376	4,015	30.03	193	136	132	461	164.41	82
Tumkur ...	9,08,830	1,533	1,577	1,618	4,728	20.81	1,112	837	914	2,863	12.60	229	171	144	544	115.06	48
(Mysore State) (Excluding C. & M. Station).	67,25,754	10,329	10,637	10,964	31,960	19.01	8,993	7,563	8,761	25,317	15.06	1,587	1,197	989	3,773	118.05	516
Total (Cities)	4,04,580	1,267	1,314	1,239	3,820	37.77	1,149	900	1,012	3,061	30.26	295	246	160	701	183.51	136
Bangalore City.	2,01,260	599	609	602	1,810	35.97	565	433	419	1,417	28.16	159	109	75	343	189.50	80
Mysore City	1,19,601	331	315	272	918	30.72	308	217	396	921	30.80	59	43	37	139	151.42	41
Kolar Gold Field.	83,719	337	390	365	1,092	52.17	276	250	197	723	34.54	77	94	48	219	200.55	15

TABLE 2.

*Reported Deaths in the Districts and Cities of the Mysore State in the Quarter, January—March 1937, classified according to the Chief Causes of Death.*

District	Plague	Small-pox	Cholera	Malaria	Typhoid	Other Fevers	Dysentery and Diarrhoea	Respiratory Diseases	Consumption	Leprosy	Child-birth	Suicide	Drowning	Wounds and Accidents	Killed by wild beasts	Snake-bite	Rabies	Total Deaths	
																		January to March 1937	October to December 1936
Bangalore	53	41	188	533	168	576	275	349	230	24	40	6	29	28	2	5	2	4,033	4,186
Chitaldurg	...	96	91	775	101	316	105	131	76	19	60	3	27	21	1	5	5	2,307	2,484
Hassan	49	20	20	1,302	99	160	96	60	84	14	70	6	12	22	...	2	...	2,320	2,696
Kadur	...	2	14	640	65	92	55	50	22	8	46	3	5	6	...	...	1	1,195	1,482
Kolar	152	30	58	671	138	285	169	221	112	23	39	10	35	18	1	1	9	2,755	3,337
Mysore	155	139	1,278	1,410	274	430	398	308	268	41	126	17	28	41	5	5	5	5,829	5,413
Shimoga	...	10	372	1,610	257	575	206	143	71	18	120	7	12	17	6	3	1	4,015	3,756
Tumkur	...	60	10	943	162	333	208	107	259	29	87	3	43	27	...	5	4	2,863	2,953
(Mysore State) Total	409	395	2,031	7,834	1,264	2,767	1,512	1,359	1,122	176	588	55	191	180	15	26	27	25,317	26,307
(Cities) Total	36	3	192	39	45	107	320	516	182	1	25	9	5	26	...	...	2	3,061	2,971
Bangalore City	25	1	24	4	26	31	127	247	81	1	6	3	1	3	...	...	1	1,417	1,399
Mysore City	5	...	168	24	15	30	97	120	90	...	19	2	...	14	...	...	1	921	789
Kolar Gold Field...	6	2	...	11	4	46	96	149	11	...	...	4	4	9	...	...	...	723	783



MYSORE STATE

PLAGUE  
SMALLPOX  
CHOLERA  
April - June, 1937.



Deaths by Taluks.

100 10 1

- Cholera.
- Plague.
- Smallpox.

DISTRICTS.  
TALUKS.







## MYSORE STATE DEPARTMENT OF HEALTH.

The following Bulletins are published by Government:—

No. 1. **Report on a Health Survey of Mysore—**

By W. C. SWEET, B.Sc., M.D., Dr.P.H., Consultant in Health in Mysore, Bangalore, 1928.

No. 2.\* **Report on Tuberculosis in Mysore State—**

By P. S. CHANDRASEKHAR, M.D., sometime Officer-in-charge of Tuberculosis Survey in Mysore, 1928.

No. 3.\* **Report on a Sanitary Survey of the City of Bangalore for the Year 1927—**

By MOHAMED USMAN, L.M.S., (Retired) Senior Surgeon and Sanitary Commissioner, Bangalore, 1928.

No. 4.\* **Guineaworm Disease in Mysore State—**

By J. V. KARVE, M.B., CH.B., D.P.H., (Retired) Director of Health in Mysore, Bangalore, 1929.

No. 5 **Report of the Delegation of the British Social Hygiene Council (Inc.), to the Government of Mysore, 1929.**

No. 6. **Report on the Present Status of Birth, Death and Epidemic Diseases Reports in Mysore District, Bangalore City and Kolar Gold Fields, with Suggestions for Improvement—**

By E. R. SUNDARARAJAN, M.A. (Hons.), Superintendent, Bureau of Vital Statistics, Bangalore, 1929.

No. 7. **A Survey of Mysore State for Enlarged Spleens and for Hook-worm and other Helminthic Infections—**

By W. C. SWEET, B.Sc., M.D., Dr.P.H., Consultant in Health in Mysore, Bangalore, 1929.

No. 8. **Physician's Pocket Reference to the International List of Causes of Death, 1932.**

No. 9. **Handbook of the Mysore State Department of Health—**

By J. V. KARVE, M.B., CH.B., D.P.H., (Retired) Director of Health in Mysore, Bangalore, 1933.

No. 10. **Notes on Malaria in Mysore State—**

By W. C. SWEET, B. A. RAO and D. NURSING, 1934.

No. 11. **Organic Manure from Street Refuse and Night Soil at Mysore City, India—**

By J. J. MIELDAZIS, B.Sc., C.E., M.A.S.C.E., Former Honorary Sanitary Engineer, 1936.

No. 12. **Periodicity of Cholera in Mysore State—**

By P. Parthasarathy, L.M.S., B.S.Sc., L.R.C.P., L.R.C.S., D.T.M., D.P.H., Director of Public Health and E. R. Sundararajan, M.A. (Hons.), 1937.

\* Not available.